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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,666	01/24/2002	Wolfgang Billinger	P67552US0	8422

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EXAMINER	
DINH, TIEN QUANG	

ART UNIT	PAPER NUMBER
3644	

MAIL DATE	DELIVERY MODE
07/29/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/053,666	BILLINGER ET AL.	
	Examiner	Art Unit	
	Tien Dinh	3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15,19-28,30 and 32-36* is/are pending in the application.

4a) Of the above claim(s) *24,25 and 28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15,19-23,26,27,30 and 32-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 36 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 36, last line, "with one another" is vague and indefinite. One another refers to what?

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 15, 19, 21-23, 26, 27, 30 and 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirahara et al (6,234,423) and in view of Padden 5224670.

Hirahara discloses a fitting (13 made up of parts13a,b), Moveable Part 11, 14, 15 in combination and illustrated in Figure 10 #13a&b connect #11/14/15 to the tail of the aircraft (see Figure 3); both skins 11, 12 and the spar 13 are bonded by a pasty thermosetting adhesive to together form a single structure the box-structure airfoil 10 comprises a composite material upper skin 11 forming a top surface of the airfoil, a composite material lower skin 12 forming a bottom

surface of the airfoil, and a composite material spar 13 (see Col. 4, lines 50-60) made from CFRP (Carbon Fiber Reinforced Polymer, see Col. 5, lines 33-41). The movable part (#11-15) is an elevator (see figure 3). The fact that Hirahara et al do not employ a resin transfer molding method is of no consequence since this limitation is a product by process limitation. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even through the prior product was made by a different process. The movable part (#11-15) is control surface (see Figure 3). Both skins 11, 12 and the spar 13 are bonded by a pasty thermosetting adhesive to together form a single structure. (Integral) Plus to make things integral is a routine step one skilled in the art would have used to make a stronger structure. The box-structure airfoil 10 comprises a composite material upper skin 11 forming a top surface of the airfoil, a composite material lower skin 12 forming a bottom surface of the airfoil, and a composite material spar 13 (see Col. 4, lines 50-67) made from CFRP (Carbon Fiber Reinforced Polymer, see Col. 5, lines 33-41). The material used to make the airfoil 10 has reactive material since it is CFRP.

The fitting is imbedded in the recess as shown in figures 1 and 2. The upper covering layer and lower covering layer is 11, 12 respectively. The fitting is inbetween them. See figures 1 and 2. The indentation in the moveable part is readily seen in figure 2.

Re claim 30, since the fitting and movable parts are made out of the same material, CFRP, the thermal expansion coefficient is the same.

Hirahara does not disclose bearing.

A **bearing** is a device to permit constrained relative motion between two parts, typically rotation or linear movement

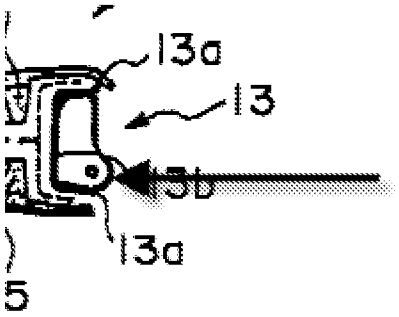
The examiner takes OFFICIAL NOTICE that bearings are notoriously well known means to permit constrained relative motion between a structural and a movable part (see for examle www.wikipedia.org).

It would have been obvious to one having ordinary skill in the art, at the time the invention was made to use a bearing to permit constrained relative motion between the elevator and the tail.

Applicant has not challenged that bearings are well known and is now admitted prior art.

IN response to amendment to claims 15, 27, 28, 30, 35, 36, the examiner maintains that the budged-out portion (where number 13b is pointed to in figure 1) is an arm extended outwardly in a direction away from the movable part mounting structure. Plus, the integral fitting 13 has a movable part mounting structure which can be the part 13a. The structural component connecting part so as to connect the movable part with the structural component is part 13b (which is where the arm is). Although Hirahara et al doesn't have a number to shown the aperture on the arm, it is clearly shown in figure 1 that the aperture is where the movable part 11, 14, 15 is connected to the structural component (or wing) of the aircraft. The aperture defines a bearing surface having bearings. Since the movable surface 11, 14, 15 is pivotable, the bearing is located in the aperture so that the movable surface can pivot with respect to the

structural component. Hirahara et al teaches the use of glue to secure the movable parting mounting structure to the movable part. See column 5, lines 23-32.



Extending Arm

RE claims 35 and 36, the second arm is clearly shown in figure 2. The fitting 13 has many arms. The articulation points are where the bearings are fitted inside the apertures. Since the apertures are parallel to each other, the articulation points are parallel to the other articulation points.

Although, the examiner feels that Hirahara et al teaches what has been claimed, the examiner also rejects the claims in view of Padden. Padden clearly teaches fittings 4, 5, 6, that have arms (first, second, third, etc) with apertures 11-14 are well known. Arms are also shown in figure 2 with apertures. A person skilled in the art would have used integral fittings with arms in Hirahara et al as taught by Padden to allow better control of the movable part.

3. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirahara as modified by Padden 5224670 in view of Koppelman et al (3,102,559). Hirahara does not

disclose using nylon as a reactive material. Koppelman discloses a composite material formed by impregnating woven structure made of nylon fibers with a thermosetting resin (see col. 14, line 22). It would have been obvious to use nylon as the reactive material since nylon allows for improved tensile strengths with relatively high compression strength. Furthermore, it has been held that to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960) (selection of a known plastic to make a container of a type made of plastics prior to the invention was held to be obvious.)

Response to Arguments

In response to applicant's arguments that Hirahara et al doesn't mention "hinges", the applicant did not "hinges". Furthermore, although Hirahara et al doesn't mentioned "hinges", it is clear that the fittings 13 allow the movable parts 11, 14, 15 to pivot or hinge with respect to the structural component of the aircraft. The apertures in the arms of the fitting 13 allows the movable parts to pivot.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tien Dinh whose telephone number is 571-272-6899. The examiner can normally be reached on 12-8.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mansen can be reached on 571-272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tien Dinh/
Primary Examiner, Art Unit 3644